

CLAIMS

1. A process for the conversion of olefins in a reactor which comprises continuously passing a feed comprising an olefin and water through a bed
5 of catalyst under conversion conditions to form a conversion product, the water content of the feed being automatically controlled according to an analysis of the composition of the feed.
2. The process according to claim 1 in which the water is introduced into the feed by means of a water wash.
- 10 3. The process according to claim 2 in which one or more coalescers are provided downstream of the water wash.
4. The process according to any preceding claim wherein the water content of the feed is automatically controlled in dependence on the results of the analysis by one or more of (a) introducing water into the feed, (b) drying
15 the feed and (c), in the case where a water wash is used, adjusting the temperature of the water wash.
5. The process according to any of the preceding claims wherein an on-line analyser is provided to determine the composition of the feed as it is fed to the reactor.
- 20 6. The process according to any of the preceding claims in which the analysis of the reactor feed also includes a measure of the concentration of oxygenated components.
7. The process according to any of the preceding claims wherein the water content of the feed is controlled to be greater during the initial phase of the
25 process than the latter phase of the process.
8. The process according to any of the preceding claims in which the conversion products are separated from unreacted olefins and diluent (if any).

9. The process according to claim 8 in which the unreacted olefins and/or diluent (if any) are recycled to the reactor.
10. The process according to any of the preceding claims in which the conversion is performed in a tubular reactor.
- 5 11. The process according to any of claims 1 to 9 in which the conversion is performed in a chamber reactor.
12. The process according to any preceding claim in which the conversion is oligomerisation.
- 10 13. The process according to claim 12 wherein the conversion product comprises C5 to C20 olefins in the boiling range of 30°C to 310°C.
14. The process according to claim 12 or 13 which comprises the oligomerisation of a mixture of C3 and C4 olefins.
- 15 15. The process according to claim 12 or 13 which comprises the oligomerisation of ethylene, propylene, butenes and/or amylenes to produce C6 to C15 olefins.
16. The process according to any of claims 12 to 15 in which the conversion products are purified for use in subsequent reactions.
17. The process according to claim 16 in which the conversion products are desulphurised.
- 20 18. The process according to any of claims 1 to 11 in which the conversion is alkylation.
19. The process according to any of the preceding claims in which the catalyst comprises a zeolite catalyst.
- 25 20. The process according to claim 19 wherein the temperature of the conversion is from 110°C to 310°C.

21. The process according to any of claims 1 to 18 in which the catalyst comprises a solid phosphoric acid.
22. The process according to claim 21 wherein the temperature of the conversion is from 200°C to 300°C.